

Subchapter C : Construction Requirements

§299.21. Applicability.

This subchapter applies only to engineering plans and specifications for the construction, enlargement, repair, or alteration of dams requiring commission authorization, except as follows:

(1) Exceptions approved in accordance with §299.5 of this title (relating to Exception);

(2) Dams designed by and constructed under the supervision of federal agencies such as the Corps of Engineers, Bureau of Reclamation and the Soil Conservation Service.

§299.22. Approval of Plans and Specifications.

Construction of a dam or the enlargement, repair, or alteration of an existing dam requiring commission authorization shall not be commenced prior to the executive director's written approval of final construction plans and specifications. Construction plans and specifications shall be submitted to the executive director and shall be as completely detailed as necessary for submission to the contractors bidding on the proposal. Contractors shall not commence construction until provided with a copy of the plans and specifications evidencing the approval. This does not apply to ordinary maintenance or emergency repair. The executive director may require the filing of additional information and data which, in his opinion, may be necessary for determining the adequacy of operational functions and safety of the structures and works related thereto. The official name of the dam and reservoir by resolution of the governing body or by certificate if individually owned shall be submitted to the department as early as possible, preferably with the construction plans.

§299.23. Content of Construction Plans and Specifications.

(a) Construction plans requiring approval by the executive director may include the following, as determined by the executive director:

(1) A topographic map of the dam site with contour intervals of not to exceed five (5) feet. A plan of the dam shall be superimposed on this map showing the location of spillways, outlet conduit, cutoff walls and other structures;

(2) A profile of the dam site taken on the long axis of the dam and a profile of each spillway along its long axis. The profile shall also show the location of the outlet conduit and spillway. A log showing the classification of materials encountered below the surface as shown by test pits or borings should be included;

(3) A cross section of the dam at maximum section showing complete details and dimensions;

(4) Detailed plans showing sections of outlet conduits, control works and spillways. These sections should be of sufficient number and detail to delineate clearly all features of the structure; and

(5) The location of all permanent instrumentation shall be shown on the plans. All pressure cells, settlement plates, piezometers, slope indicator casing or other devices shall be noted.

(b) Construction plans shall be accompanied by specifications which may include, but are not limited to the following:

(1) The requirements for the various types of materials to be used in the construction of all pertinent works;

(2) A specified time of completion, i.e., a requirement that the contractor's bid contain a time of completion;

(3) A provision to the effect that plans and specifications shall not be substantially or materially altered without prior written approval of the executive director.

(c) Other engineering reports and additional information are sometimes prepared and may be required by the executive director for review. These reports, applicable to the type of structure (earthfill, rockfill or concrete) in question, may include details such as geology of the project site and vicinity, location and logs of test borings, pits and shafts, results of field and laboratory tests on structural and foundation materials; seepage studies, and stability analyses of embankments, spillways, retaining walls, etc. Additional information required may include recommendations concerning embankment slopes, crest width, berms, core trench depths, moisture-density and strength requirements, minimum compressive strength for concrete, construction sequence procedures and/or techniques for excavations and embankments, and types of compaction equipment, borrow excavation techniques and sequence of fill placement.

§299.24. Maintenance of Records.

(a) The owner shall continuously maintain records to insure compliance with the approved plans and specifications during construction. Copies of these records shall be furnished to the executive director at monthly intervals during the construction period, and may include but not necessarily be limited to such items as soil moisture-density test results, and concrete trial batch designs test and compression test results.

(b) Other observations which may be recorded include final bottom width and elevations of core and cutoff trenches, structural excavations, permanent sheet piles or bearing piles, and documentation of foundation groutings, dewatering problems, or observations during the construction period of any instruments installed to measure movements, stresses and pore pressure.

§299.25. Construction Progress Report.

Within 10 days after beginning actual construction of a project, the executive director shall be notified in writing of the date work began. Thereafter, monthly reports of progress shall be forwarded to the executive director by the 10th of each month during construction. The report shall show the work accomplished during the month, the percent of time used and the percentage of completion of the project as of the close-out date of the report. In addition, the report shall show the inclusive dates of the reporting period.

§299.26. Construction Inspection.

Inspection of construction work shall be conducted by a registered professional engineer experienced in the construction of dams and responsible directly to the owner. Continuous daily inspections shall be made and may be delegated to a qualified technician (inspector) provided he is under the supervision of the owner's engineer. The executive director may make periodic inspections for the purpose of ascertaining compliance with approved plans and specifications. The executive director shall require the owner, at his expense, to perform the work or tests necessary and to disclose information sufficient to enable the executive director to determine that conformity with approved plans and specifications is accomplished.

§299.27. Plan and/or Specification Changes and Amendments.

If after inspection, investigation or examination, or at any time as the work progresses, the executive director finds that changes or amendments are necessary to insure safety, he may request the owner to revise his plans and/or specifications. Alterations of the plans and specifications must be approved by the executive director before work commences under the changes, except in emergencies requiring immediate action of which the executive director shall be immediately notified. If the proposed alterations would result in deviation from the permitted right, amendment of the permit must be obtained from the commission.

§299.28. Non-Compliance with Approved Plans and Specifications.

If at any time during construction, enlargement, repair, or alteration of any dam or reservoir the executive director finds that the work is not being done in accordance with approved plans and specifications or in accordance with approved revised plans and specifications, he shall give written notice thereof and direct compliance by certified mail to the owner. If the owner fails to comply with the directive, the executive director may take appropriate action to assure compliance. Failure to comply with approved plans and specifications will be grounds for revocation of the permit and/or civil penalty as provided by law. The commission may order the structure removed to eliminate any safety hazard to life and property.

§299.29. Deliberate Impoundment.

Written approval of the executive director must be obtained prior to deliberate impoundment of water in a partly or newly completed reservoir designed to impound more than 1000 acre-feet at normal storage capacity. Deliberate impoundment shall mean any act which results in the intentional impoundment of water in the reservoir and includes but is not limited to closure of the lowest planned outlet or spillway serving the reservoir, blocking the diversion works used during the construction and beginning backfill within the closure section of a dam. Temporary closing of a valve or spillway gate for operational testing shall not be construed as an act of deliberate impoundment.

§299.30. Certificate of Completion.

Immediately upon completion of a new dam and reservoir, or enlargement, repair or alteration of an existing dam and reservoir, the owner shall file a certificate with the executive director, signed by the responsible engineer supervising the work for the owner, certifying that, to the best of the engineers knowledge, the construction, alterations, or repairs were completed in accordance with the approved plans and specifications. In the case of projects excepted under §299.5 of this title (relating to Exception), the owner

shall notify the executive director in writing that construction, alterations, or repairs were completed.

§299.31. Record Drawings and Permanent Reference Mark.

As soon as possible after completion of construction, the owner or his engineer shall submit to the executive director a complete set of record drawings of the project for filing with the permanent records of the department. One or more permanent reference mark(s) shall be established for future use near but separate from the project. Accurate location(s) and elevation(s) above mean sea level shall be shown on the record drawings.